AMENDMENTS TO THE CLAIMS

In the Claims:

Please cancel claims 2, 7-8, 10, 12, 14-15, 22 and 24; and amend claims 1, 3-6, 9, 11, 13, 16-18, 21, 23 and 25-28 in the following manner. This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A high throughput screening method for assaying non-, pro- or anti-apoptotic or proliferative or necrotic activity of test compounds in cells using vectors coding for a fluorescent marker protein and test cells transfected with said vector comprising a primary and a secondary screening step, wherein the primary screening step comprises measurement of the overall fluorescence activity of the test cells within a single well with a fluorescence detecting device, and wherein the secondary screening step comprises measuring of single-cell fluorescence activity of each test cell within a population of test cells with a fluorescence detection device.

2. (Cancelled).

3. (Currently Amended) The screening method of claim ~~2~~ 1, wherein the marker protein is the GFP protein or GFPmut1 protein.

4. (Currently Amended) The screening method of claim ~~3~~ 1, wherein the test cells are derived from healthy individuals/animals or patients/animals with diseases selected from the group consisting of degenerative diseases, cancer diseases, autoimmune and/or inflammatory diseases, cardiovascular diseases and neurological disorders.

5. (Currently Amended) The screening method according to claim [4] 1, wherein the test cells are selected from the group consisting of Jurkat, HeLa, A20, KB, MCF7, Ramos, SK-MEL-1, SK-MEL-28,PC-3,NCI-H460,NCI-H1792, Raji, SK-BR-3, HaCaT, DM, HBL, SW480, HT-1080, HBL-100, Hs578T, MDA-MB-330, C-33A, BT-474, MDA-MB-133-VI, MDA-MB-157, MOLT-4, K-562, HCT-8, SW620, SW480, LoVo, SW403, SW1471, HL-60, HUT 78, H9, U937, Hep G2, PLC/PRF/5, Hs 683, U-138MG, A172 cells.

6. (Currently Amended) The screening method according to claim [4] 1, wherein said test cells are spheroids.

7. (Cancelled).

8. (Cancelled).

9. (Currently Amended) The screening method according to claim ~~8~~ 1, wherein the fluorescence detecting device in the primary screening step is a fluorescence plate reader.

10. (Cancelled).

11. (Currently Amended) The screening method according to claim ~~10~~ 1, wherein the primary screening step discriminates on one side between pro-apoptotic and/or necrotic activity and on the other side non- and/or anti-apoptotic and/or proliferative activity of test compounds.

12. (Cancelled).

13. (Currently Amended) The screening method according to claim ~~12~~ 1, wherein the fluorescence detecting device in the secondary screening step is selected from the group consisting of flow cytometry, microfluid (chip) devices, and single cell imaging scanning systems.

14. (Cancelled).

15. (Cancelled).

16. (Currently Amended) The screening method according to ~~any of the preceding claims~~ claim 1, wherein the compound to be tested is selected from the group consisting of synthetic or natural compounds, chemical or peptide structures or a combination thereof, proteins or recombinant proteins, pure compounds or a combination of pure compounds or ~~extracts, such as~~ plant extracts, extracts of marine micro- and macro-organisms and extracts of microbial fermentations.

17. (Currently Amended) The screening method according to claim 16, wherein the compound to be tested is a therapeutic/diagnostic agent selected from the groups comprising:

a) antimetabolites;

b) alkylating agents;

c) cell-cycle inhibitors;

d) DNA breaker ~~(topo-isomerase inhibitor, intercalator, strand breaker)~~;

e) mixtures thereof;

f) compounds interfering with the signal transduction pathway~~, such as caspase activity modifiers, agonists and antagonists of cell death receptors, modifiers of nucleases, phosphatases and kinases~~.

18. (Currently Amended) The screening method according to ~~any of the preceding claims~~ claim 1, wherein the test cell system comprises cell lines or primary cells in form of single cells, single-cell populations of same origin, mixed-cell populations of different origin or spheroid cell forms.

19. (Original) The screening method according to claim 18, wherein the test cell system comprises eukaryotic cells selected from the group consisting of mammalian, fungal, insect, avian, worm, fish, crustacean, reptilian, amphibian and plant cells.

20. (Original) The screening method according to claim 19, wherein said eukaryotic cells are genetically non-altered cells, cells infected with virus, parasites, bacteria, fungi or prions, tumor cells or genetically manipulated or altered cells of human, animal or plant origin.

21. (Currently Amended) The screening method according to claim ~~20~~ 19, wherein said eukaryotic cells are derived from human or animal tissues and/or organs selected from the group comprising liver, kidney, spleen, heart, lung, brain, blood, skin, muscles, bladder, myeloid and lymphoid system, reproductive system, bone marrow, gut, small intestine, mucosa, stomac, esophagous, duodenum, colon, pancreas, connective, embryonal and fetal tissue.

22. (Cancelled).

23. (Currently Amended) The screening method according to ~~claims 1 to 18~~ claim 18, wherein the test cell system comprises prokaryotic cells selected from the group consisting of bacterial and cyanobacterial cells.

24. (Cancelled).

25. (Currenlty Amended) Use of the screening method according to ~~any of the preceding claims~~ claim 1 for drug screening.

26. (Currently Amended) The use of the screening method according to claim 25, wherein the drug screening is applied in the therapeutic and diagnostic fields selected from the group comprising cancer including angiogenesis, autoimmune and transplantation derived diseases, cardiovascular and degenerative diseases of various origin, ~~such as~~ neurodegenerative diseases, inflammation and allergic diseases, diseases of the reproductive system, dermatological applications and related diseases.

27. (Currently Amended) ~~Use~~ The use of the screening method according to ~~claims 1 to 24~~ claim 25 for toxicological studies.

28. (Currently Amended) The use of the screening method according to claim 27, comprising ~~an~~ assaying of necrotic activity of toxic compounds.

29. (Original) The use of the screening method according to claim 28, the toxicological studies being selected from the group comprising hepatotoxicological, kidney toxicity, skin toxicity, neurotoxicity, connective, embryonal and fetal toxicity studies, toxicity of the spleen, heart, lung, blood, skin, muscles, bladder, myeloid and lymphoid system, reproductive system, visual system, bone marrow, gut, small intestine, mucosa, stomac, esophagous, duodenum, colon and pancreas.